

REMARKS/ARGUMENTS

The following remarks are responsive to the points raised by the Office Action dated September 30, 2005. In view of the following remarks, reconsideration is respectfully requested.

The specification has been amended to correct an error at page 15, line 31. The error would be apparent to one of ordinary skill in the art upon reading page 15, lines 31-32. "After completion of a second heating step," a *third* (not second) heating step is performed, as Figure 1D shows. Figure 1D shows a *third* heat treatment that follows first and second heat treatments in Figures 1B and 1C. The error is also apparent from the context from page 15, line 1 to page 16, line 5. No new matter has been added, and the basis for the amended language may be found within the original specification, claims and drawings. Entry is respectfully requested.

Claims 1-13 are currently pending. Claim 5 has been amended to correct a grammatical error.

No new matter has been added, and the basis for the amended language in claim 5 as well as the specification may be found within the original specification, claims and drawings. Entry of the above is respectfully requested.

Claims 1-8 and 13 were provisionally rejected under the doctrine of obviousness-type double patenting as unpatentable over claims 64-66 and 73-75 of copending Application No. 10/926,321.

Claim 1 was provisionally rejected under the doctrine of obviousness-type double patenting as unpatentable over claim 21 of copending Application No. 10/932,319.

Because these rejections are presently only provisional, Applicants do not address them here.

Claims 1-13 were rejected under 35 U.S.C. § 103 as unpatentable over JP 2002-060691 to Hayashi (hereinafter, "Hayashi") in view of JP 2001-098218 to Nobe (hereinafter, "Nobe").

This rejection is respectfully traversed.

A *prima facie* case of obviousness requires that the proposed combination of references disclose each and every element of the claims. It is respectfully submitted that the Office Action does not set forth a *prima facie* case of obviousness because the proposed combination of references, Hayashi and Nobe, does not disclose or teach all of the elements of independent claim 1.

Independent claim 1 recites vaporizing the pore-forming agent in an *oxidizing*-gas ambient in a third heat treatment. According to the Office Action, Hayashi teaches the formation of a porous film (i.e., the polymerization of the polysiloxane and the decomposition of the porogen) at an elevated temperature under an oxidizing atmosphere.

No such teaching can be found in Hayashi. Hayashi does not teach or describe a *porous* film, or the decomposition of pore-forming agent to make a porous film. Hayashi teaches a film that is *not* porous. Hayashi teaches *curing* the coating composition by heating in an oxygen atmosphere (paragraph 42). However, Hayashi does not teach vaporizing any pore-forming agent in an oxidizing-gas ambient as claimed because there are no pore-forming agents in Hayashi. Therefore, Hayashi does not teach vaporizing a pore-forming agent in an oxidizing gas atmosphere, as claimed in claim 1.

The Office Action correctly acknowledges that Hayashi does not teach a separate heat treatment for vaporizing a porogen. According to the Office Action, it would have been obvious for one of ordinary skill in the art to include a separate heat treatment for evaporating the porogen, because Nobe teaches that it is desirable to decompose the porogen completely only after network formation of the polysiloxane. Nobe, however, does not teach vaporizing the pore-forming agent in an *oxidizing*-gas ambient, as claimed in claim 1.

Heat treatment accelerates the curing reaction of polysiloxane and simultaneously decomposes and evaporates the pore-forming agent. If the pore-forming agent decomposes before the curing reaction of polysiloxane ends, the size of the formed pores is diminished and the porosity is lowered. To prevent this result, conventional processes decompose the pore-forming agent at a temperature that is higher than the temperature of the curing process. However, this kind of conventional process presents another problem in that heat treatment at the higher temperature compromises the reliability of copper wirings. Therefore, there is a need to lower the decomposition temperature (specification, page 2, lines 5-25).

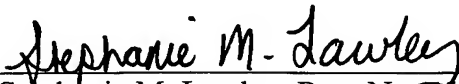
The presently claimed invention solves these problems by vaporizing the pore-forming agent in an *oxidizing-gas ambient* in a third heat treatment, as claimed in amended claim 1. Heating the polysiloxane resin coat in an oxidizing-gas atmosphere, as claimed, *accelerates* the decomposition and vaporization of the pore-forming agent so that the heating temperature can be *lowered*. Accordingly, the present invention solves the above-mentioned problems.

Since the step of vaporizing a pore-forming agent in an oxidizing atmosphere is completely absent from the combination of Hayashi and Nobe, there is no teaching that would lead one of ordinary skill in the art to vaporize a pore-forming agent in an oxidizing atmosphere, as claimed. In fact, neither Hayashi nor Nobe teaches or suggests vaporizing the pore-forming agent in an oxidizing atmosphere. Accordingly, a *prima facie* case of obviousness has not been established, and therefore the § 103 rejection cannot properly be maintained.

Since independent claim 1 is allowable for the reasons set forth above, the dependent claims are also allowable because they depend from allowable independent claim 1.

For the reasons set forth above, reconsideration of the rejection is respectfully requested.

Respectfully submitted,



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